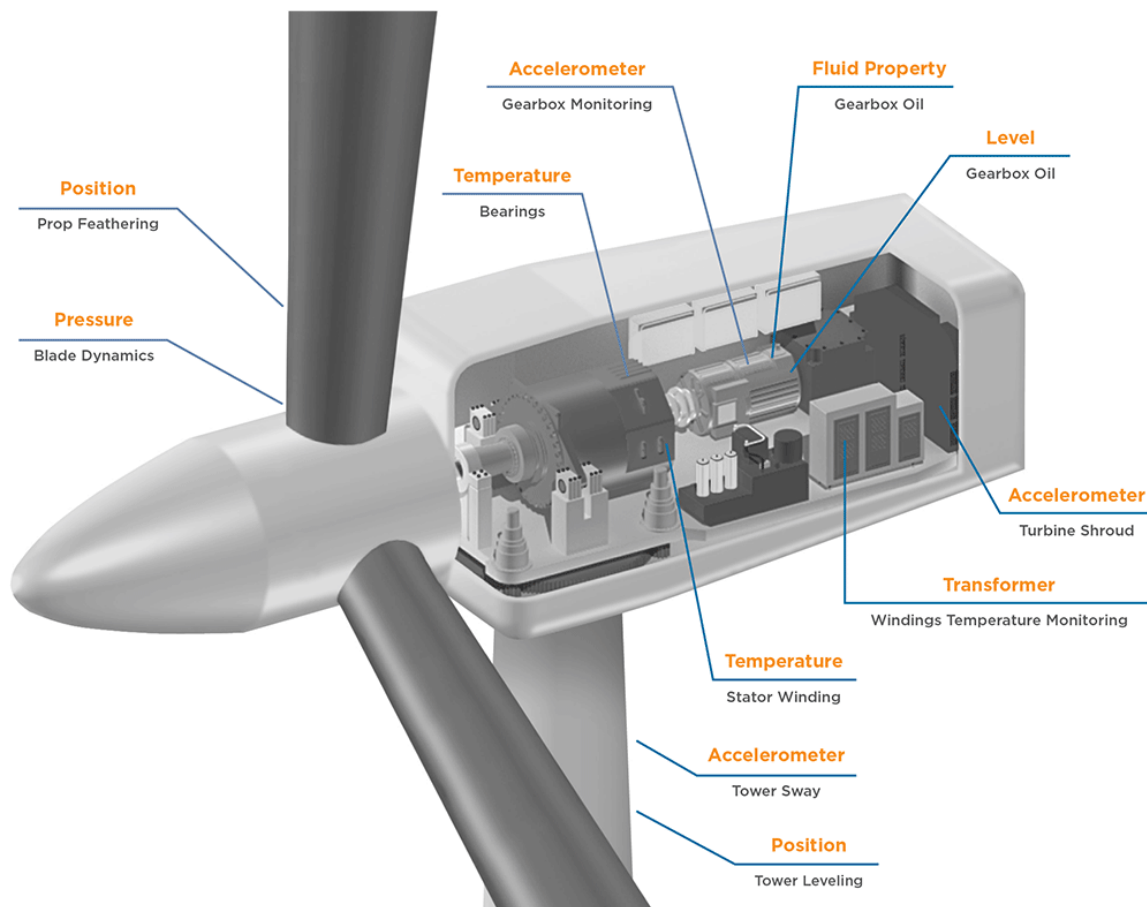


Main Sensors on a Wind Turbine

- What is **typically measured**:
 - Position
 - Pressure
 - Temperature
 - Accelerometer (vibration, speed)
 - Transformer
 - Level
 - Fluid Property



- What data **do we have** from France?
 - Wind Vane Position
 - **Wind Speed**
 - **Generator Stator Temperature**
 - **Nacelle Temperature**
 - The nacelle should be what holds all the components
 - **Torque**
 - **Gearbox Bearing Temperature**
 - **Generator Speed**
 - Converter Torque
 - Apparent Power

- Power Factor
 - **Generator Bearing Temperature**
 - Pitch Angle Setpoint
 - Reactive Power
 - **Gearbox Inlet Temperature**
 - Grid Frequency
 - Absolute Wind Direction
 - Nacelle Angle
 - Gearbox Oil Sump Temperature
 - Hub Temperature
 - Active Power
 - **Rotor Bearing Temperature**
 - Outdoor Temperature
 - **Grid Voltage**
 - **Generator Converter Speed**
 - **Rotor Speed**
 - Pitch Angle
- Of these variables, which are **most relevant** to the common causes of failure?
 - **Wind Speed**
 - **Generator Stator Temperature**
 - **Nacelle Temperature**
 - **Torque**
 - **Gearbox Bearing Temperature**
 - **Generator Speed**
 - **Generator Bearing Temperature**
 - **Gearbox Inlet Temperature**
 - **Rotor Bearing Temperature**
 - **Grid Voltage**
 - **Generator Converter Speed**
 - **Rotor Speed**
- What **data viz targets** can we expect to capture?
 - Temperature levels
 - Speed levels
 - Voltage
 - Torque

Speed of the wind turbine is usually between 25 to 35mph for safety.

All of these targets are strictly quantitative.

These data viz targets will service multiple components in the turbine, and will be the best indicators of how well the machine is performing, as well as whether there is (a) intense stress on the machine from the temperature of internal components, (b) outside stress or malfunction causing increased speeds of internal components, (c) possible weather/wiring issues leading to voltage spikes, and (d) wind/machine issues resulting in increased levels of torque/acceleration.

These targets will allow users to draw insights from data so that they may apply predictive maintenance and keep their wind turbines from breaking due to these common and preventable causes.

